



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,307	03/06/2007	Kiyoshi Sadakata	KAM 22.600 (100799-00133)	5093
26304 7590 05/28/2009 KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585			EXAMINER FREEDMAN, LAURA	
			ART UNIT 3616	PAPER NUMBER
			MAIL DATE 05/28/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,307	Applicant(s) SADAKATA, KIYOSHI	
	Examiner Laura Freedman	Art Unit 3616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 2,5,8,9,12,14,16,17,19,20 and 22-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6,7,10,11,13,15,18 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/24/08; 2/13/07</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 3616

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species VI, figures 11 and 12, in the reply filed on 13 February 2009 is acknowledged. The traversal is on the ground(s) that claim 15 also reads on the elected species. This argument is found persuasive and claim 15 has been considered in the present office action.

2. Claims 2, 5, 8, 9, 12, 14, 16, 17, 19, 20, and 22-34 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim.

Drawings

3. Figures 14-17 and 23 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (based on their description in the Background Art section of the specification). See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 3, 4, 6, 7, 10, 11, 13, 15, 18, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. There is insufficient antecedent basis for the following limitations in the claims:

Claim 1 recites the limitations "the axial direction" in line 2, "the inside" in line 4, "the dimension" in line 6, "the relative positions" in line 7, "the circumferential direction" in lines 8-9, "the radial direction" in lines 9-10;

claim 3 recites the limitations "the case" in line 4, "the sides" in line 7;

claim 4 recites the limitations "the axial direction" in line 2, "the inside" in line 4, "the dimension" in line 6, "the relative positions" in line 7, "the circumferential direction" in line 9, "the radial direction" in line 10, "the case" in line 10, "the position" in line 12, "the place" in line 13, "the sides" in line 14;

claim 10 recites the limitations "the rear end" in line 2, "the flow of current" in line 4;

claim 11 recites the limitations "the inside" in line 2, "the case" in line 3, "the axial direction" in line 3, "the dimension" in line 4, "the relative position" in line 5, "the circumferential direction" in line 8, "the radial direction" in line 9;

claim 13 recites the limitations "the arrangements" in lines 1-2, "the vertical direction" in line 2;

claim 15 recites the limitations "the number of engaging portions" in line 5, "the bending force" in line 5, "the number of the other engaging portions" in line 6;

Art Unit: 3616

claim 18 recites the limitations "the member" in lines 3-4, "the other member" in line 4;

claim 21 recites the limitations "the rear end" in line 2, "the flow of current" in line 4.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 3, 4, 6, 7, 11, 13, 15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butts (US 3,538,783). Butts discloses a shock absorbing steering column apparatus (for example, including #12) provided with:

- Outer column (for example, including #22), one part of which in the axial direction thereof (for example, including the direction along the length of the outer column, from left to right in figures 1-3, 6) is fixed to a bracket (for example, including #28), so that the outer column is supported on a vehicle body (for example, including #10) by means of the bracket
- Inner column (for example, including #24), one end portion of which is inserted into the inside of one end portion of the outer column (for example, can be seen in figures 2, 3, 6, 7)
- In the case where a large load in the axial direction is applied between the outer column and the inner column, the dimension in the axial direction is made contractible by means of a mutual shift in the relative positions of the outer column and the inner column in the axial direction (discussed throughout specification)
- Engaging portions (for example, including balls #40, 42, sleeve #44, notches #40a, 42a, and indentations #40b, 42b) that have interference are provided in one part in the circumferential

Art Unit: 3616

direction of an overlap portion where the outer column and the inner column overlap in the radial direction (for example, can be seen in figures 2-7)

- Position of the bracket is 'matched' in relation to the axial direction with the overlap portion (for example, edge of bracket #28 'matches' edge of portion where #22 overlaps #24)
- Fixing place (for example, including place where #28 is fixed to #22, as can be seen in lower portion of #22 in figures 4, 5, with the exception of a gap at the bottom of #22 in figures 4, 5) of the bracket and the outer column is in a position separated from the engaging portions of the overlap portion (for example, separated from engaging portions in that #28 does not overlap any of the engaging portions, as can be seen in figure 2)
- The engaging portions that have interference are provided in a plurality of positions around the circumferential direction in the overlap portion in which the outer column and the inner column overlap in the radial direction (for example, can be seen in figures 3-5, 7)
- In the case where it is assumed that the overlap portion is divided into two in a diametric direction (for example, as indicated by diametric dividing line in marked-up figures below), each of the engaging portions exists in a state biased towards a position away from the divided section (for example, including #40, 42, 40a, 40b, 42a, 42b located away from diametric dividing line)
- The place where the bracket and the outer column are fixed is in the vicinity of the engaging portion existing on one of the sides of the overlap portion which is assumed to have been divided (for example, including #40, 42, 40a, 40b, 42a, 42b on the bottom or on the sides in figures 4, 5)
- The respective engaging portions exist unevenly in relation to the circumferential direction (for example, can be seen in figures 3-5, 7)

Art Unit: 3616

- The engaging portions exist in four places in relation to the circumferential direction (for example, including top, bottom, left side, and right side in figures 4, 5)
- An interval in relation to the circumferential direction between engaging portions that exist astride an imaginary line orthogonal to the direction of division (as indicated by orthogonal diametric dividing line in marked-up figures below) is made smaller than an interval in relation to the circumferential direction between engaging portions that exist astride an imaginary line in the direction of division (for example, an interval between #40, 42 located on the upper portion of #22, 24 and to the left of the orthogonal diametric dividing line in figures 4, 5 and the orthogonal diametric dividing line, is made smaller than an interval between #40, 42 located on the left side of #22, 24 and above diametric dividing line in figures 4, 5 and the diametric dividing line, as can be seen in marked-up drawings below)
- The engaging portions that have interference are provided in a plurality of positions around the circumferential direction in an overlap portion in which the outer column and the inner column overlap in the radial direction (for example, can be seen in figures 2-7)
- Each of the engaging portions is arranged unevenly in relation to the circumferential direction (for example, can be seen in figures 3-5, 7)
- The arrangements of the respective engaging portions are biased in the vertical direction in an installed state (for example, more engaging portions are located in the upper and lower portions, in comparison to the left and right sides, as can be seen in figures 4, 5)
- The engaging portions positioned unevenly with respect to the circumferential direction respectively exist in positions separated in the axial direction of the overlap portion of the outer column and the inner column (for example, can be seen in figures 2, 3, 6, 7)
- Of each of the engaging portions, the number of engaging portions upon which the bending force acts at the time of a collision (for example, including those engaging portions located

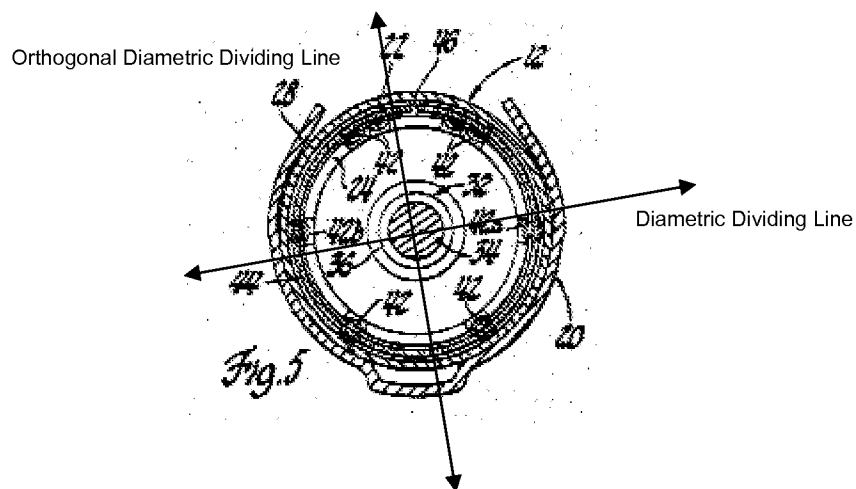
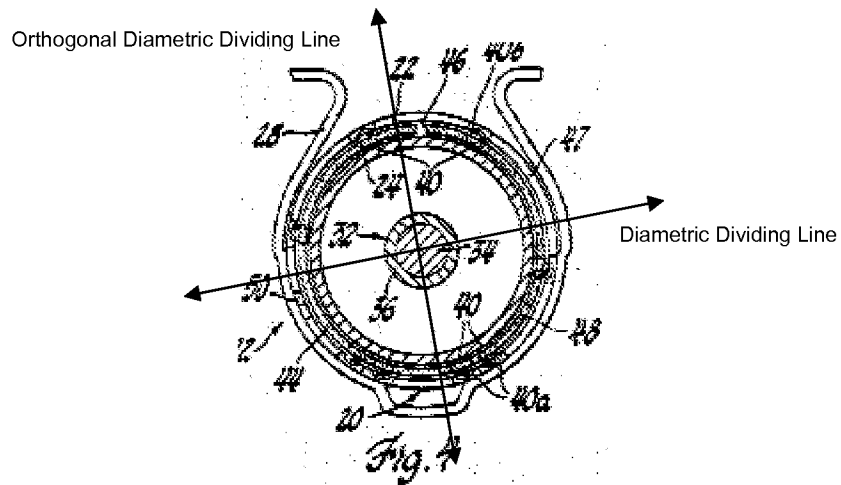
Art Unit: 3616

closest to the orthogonal diametric dividing line) is made to be greater than the number of the other engaging portions (including bottom of column 3-top of column 4)

- The engaging portions are constructed by forming protrusions (for example, including balls #40, 42, sleeve #44, notches #40a, 42a, and indentations #40b, 42b) in a plurality of positions around the circumferential direction of the member of either one of the outer column and the inner column, and engaging the respective protrusions with the other member in a state having interference (for example, can be seen in figures 2-7).

Examiner notes that lines drawn in the marked-up figures below may not intersect exactly at the center point of the steering column components, and may not be precisely orthogonal to each other, but have been drawn to the best of her ability, and are merely exemplary in nature.

In regards to the outer column (for example, including #22) being fixed by welding to the bracket (for example, including #28), the method of forming is not germane to the issue of patentability, and thus this limitation has been given little patentable weight. Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the attachment of the outer column to the bracket to including welding, since welding is exceedingly old and well known in the automotive art as being an inexpensive, durable, and weather-resistant means of fixing steering components to one another, and this method of forming would yield predictable results.



9. Claims 10 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maekawa (US 6,431,601) in view of Butts (US 3,538,783). Maekawa discloses an electric power steering apparatus provided with:

- Steering shaft (for example, including #1), on the rear end of which a steering wheel (for example, including #100) is fixed
- Steering column (for example, including #2) through which the steering shaft can be freely inserted

Art Unit: 3616

- Electric motor (for example, including #8, 8a) that imparts a force to the steering shaft in a rotational direction according to the flow of current.

While Maekawa discloses the electric power steering apparatus being capable of absorbing shock in the event of a collision (discussed throughout the specification), Maekawa does not disclose the details of the shock absorbing steering column apparatus.

Butts teaches a shock absorbing steering column apparatus, as set forth above. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the electric power steering apparatus of Maekawa to include a shock absorbing steering column, as taught by Butts, so as to enhance shock absorption due to impact of the steering column by an occupant of the vehicle in the event of a collision, and thus reduce injury to the vehicle occupant. Further, applying a known technique to improve similar devices in the same way, or to a known device ready for improvement, would yield predictable results.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited prior art discloses alone, or in combination, a shock absorbing steering apparatus provided with inner and outer columns, fixing bracket, and engaging portions with an interference fit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura Freedman whose telephone number is (571) 272-2442. The examiner can normally be reached on Monday-Friday, 9:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on (571) 272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Laura Freedman
Examiner
Art Unit 3616

/Paul N. Dickson/
Supervisory Patent Examiner, Art Unit 3616